



#### LOADING INSTRUCTIONS:

#### DISKETTE:

- o Turn off computer insert BASIC cartridge.
- o Insert diskette into drive turn on computer.

#### CASSETTE:

- o Turn off computer insert BASIC cartridge.
- o Insert cassette into cassette player rewind fully.
- o Press 'PLAY' on cassette player.
- o Hold down 'START' key on computer.
- o Turn on computer.
- o Press the 'RETURN' key after you hear the tone.
- o Allow the tape to continue loading after the 'intro'.
- If you have a disk drive, be sure to DISCONNECT the drive before loading the cassette.
- o If program will not load, try other side of cassette.

Artwork will replace any defective cassette or diskette free of charge within 90 days from date of purchase. If you damage your cassette or diskette any time after the warranty period, send it plus \$5.00 to Artwork for replacement.

### FOREST FIRE TWO



#### FOREST FIRE TWO

#### written by Richard Petersen (C) 1982 by Artworx Software Co., Inc.

#### OVERVIEW

This one or two-player simulation challenges you to fight the ravages of mother nature, to survive and extinguish the inferno. The two-player option provides an opportunity to experience head to head competition in a unique format designed to keep both players in suspense as each fights his own fire.

#### INTRODUCTION

You are the new fire coordinator assigned to protect prime forest land in southern California. Since this area is sparsely populated, any fires that occur are usually started by lightening. Typically, more severe thunderstorms produce larger fires.

The fire tower that you will be occupying is totally isolated; your only contact with the outside world will be from your communications equipment. Fortunately, the tower is outfitted with the latest in fire surveillance equipment. Recently, a fire scanner was installed and is designed to automatically signal the start of any fires in your district. This device also tracks the fire's progress and detects changing conditions that may affect its intensity and spread. A special communications satellite feeds various information to the scanner on an hourly basis and enables a computer enhanced view of the terrain. From this, you will be able to identify important structures to be protected and to verify any orders sent to dispatch men and equipment to the scene.

#### DETAILS

The area assigned to you is divided into sectors (one square mile) by the The scanner output identifies the location of woods, dry brush, lakes, your tower, a tank farm, supply center and the Governor's estate. If a fire does develop, try to keep it away from the dry brush area since a fire will spread 15% faster there. As you may have noticed, the Governor's estate happens to be located in your district. This little "retreat" of his is worth over \$20,000,000, so by all means, do not let it burn down -it may cost you your job! Another important area to protect is the \$10,000,000 gasoline tank farm. It has many large tanks holding millions of gallons of the highly volatile liquid. There is enough fuel there to destroy everything within a radius of one sector. Fortunately, located in the area is a supply center that has a landing strip, planes, heavy equipment, chemicals and water. Though the center is valued at only \$1,000,000, it must be protected in order to guarantee adequate supplies for fighting the fire. The center can catch fire as easily as any of the other structures. If it is destroyed, you will have to use the next closest center which is located 250 miles away. This will cause intermittent shortages so that about 30% of the time, your orders will not be carried out upon request. You will be signaled with a buzzer, red lights and an "OUT OF SUPPLIES" flashed on the scanner when this occurs. Of course, you must take whatever action necessary to protect the fire tower that you are in. The lakes will act as natural barriers to fire unless they are filled with burning gasoline from explosions at the tank farm. The wooded sectors are valued at \$1,000,000 each and the real estate in the entire district is worth \$190,000,000.

The scanner will visually display the fire at four levels of intensity: a new fire, a raging fire, declining and one burned down to embers. The size of the flames reflect how threatening the fire can be to surrounding areas and how long until it burns out. A sector will burn for eight hours if it is not affected by chemicals or rain. Fire can spread to any adjacent sector as long as there is something there to burn. There is a 50% chance from a declining fire and only 30% chance from one that is just embers. At a glance, you will be able to see the "hot spots" as if you were watching the real thing.

Naturally, weather conditions will affect how fast and where a fire will head. Fortunately, your scanner is equipped with sensors that will report any change in conditions. A warning tone will sound when changes occur. Wind direction is given (if there is any wind) so that you may anticipate which direction the fire will spread. A mild reading is an indication of normal conditions. Dampness will slow the spread of fire by 10% and hot weather will increase it by 10%. Rain will shorten the life of existing fires by three hours. An hour timer is displayed so that you can keep track of how long important sectors have been burning. These weather factors can work for or against you, depending on what nature has in store.

Now for the bad news. Most of the forestry budget was used to provide fire scanners to other areas. As a result, there is a shortage of personnel to combat any fires that may occur. Just three teams of fire fighters are assigned to your area. No other men can be brought in for any reason. Each team specializes in a particular method of fighting forest fires. Team #1 can be used to air drop chemical fire retardents. They have a plane at their disposal that is capable of treating the target sector plus its eight adjacent sectors. The drop area will be highlighted when you send your orders. Burning sectors will have a 50% chance of being affected by the retardent and as a result will take three hours less to go out.

Team #2 consists of a crew of men with heavy equipment that can clear away trees and vegetation from a non-burning area in order to form a fire break. This will stop the fire, but at the price of destroying the woods. Trees to be removed will have their trunks marked by yellow paint.

Team #3 is a ground-based crew equipped with brooms; shovels and backpack sprayers which can be used to hold the line on an advancing fire. They will only go into treed areas and will not cause any destruction.

You make contact with your fire fighters through the fire scanner. Simply move the target marker on the scanner display to the sector at which the team is to take action. The marker can be moved using the arrow keys on the keyboard if desired. The order will automatically go out to your men when you depress the red button on the joystick or the space bar on the computer. If you do not wish to send orders to a team, put the marker to one side and depress the button. After all orders are given, the scanner will show you the results of your actions and the progress of the fire.

Use your fire fighters to the best of your advantage by planning ahead and by protecting those areas that are the most vital. Use fire breaks only when needed because they will rate the same as a burned out area in the final scoring. Also, make sure that you do not start a fire break too close to a target sector, otherwise the fire may jump around it before the break becomes long enough to be of value. When you select a sector for dropping fire retardent, choose a sector that maximizes its exposure to

burning areas. Check the location of the ground crew to make sure that they are being put to good use. Also, take into account the wind direction and temperature, using these factors to protect important real estate and to help put out the fire.

When all the fires are out, place the target marker to one side of the screen and press the button. The scanner will survey the terrain and give you a full damage report. You will then get a personal message from the Governor regarding your performance. If the damage is excessive, you may receive orders that will affect your continued employment with the Forest Service.

#### OPTIONS

Press the RETURN key after all entries except for the Quit option.

ONE OR TWO PLAYERS - Ranger Gold plays against Ranger Blue in the two-player mode or Ranger Gold plays alone. Both players will start out with identical circumstances. After a player sends his orders, he will see the results of his actions and then the next player's map will appear instantly.

WEATHER - Allows one to influence the stability of weather patterns. Generally, the more unpredictable the weather is, the harder it will be to contain the fire. At this time your are asked if the computer should pick all options at random for you. If so, just press the RETURN key without entering a number.

SEVERITY OF STORM - The worse the storm, the more fires started by lightening.

TERRAIN - Has an effect on the distance between points of interest. Picking "CONGESTED" for example, will tend to clump everything together making it more difficult to protect important areas.

END MATCH (two players only) - After one person is out of the game, you are given the choice to let the remaining person continue playing or start a new game. Your choice would probably depend on which game goals you decided on.

QUIT - If either player or both players desire to quit before all fires are out, they may hit "Q" when it is their turn. This will give a damage total to date and then ask if the remaining player wants to continue or start with a totaly new game. This option allows both players to stop in the middle of a game and still see "who won." It may also be used in the single player mode. If you quit your job, the Governor will not make any comment about your job performance.

PLAY AGAIN - If you respond with a "Y", a new game will start immediatly. Do not hit System Reset or else you will have to type RUN and start all over again.

GAME GOALS - Before starting, this should be decided by the players. Make sure that you record the damage statistics for comparison when you both finish. Goals can be: save the most trees, be the first to put out the fire, have the least monetary damage etc. Of course, the primary goal is survival!



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## PROPER CARE INSURES AN EXTENDED MEDIA LIFE



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MAGNETIC FIELDS ERASE. KEEP FAR AWAY



USE JACKET WHEN NOT IN USE



DO NOT BEND OR FOLD



STORE AT 10° to 52° C (50° to 125° F)

# FOREST FIRE TWO Artworx Software Company, Inc. 150 North Main Street • Fairport, New York 14450

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